United States Air Force
C2 NEWS
Air Force Command and Control Training and Innovation Group
Volume 1 • Issue 1 Summer 2000 Hurlburt Field, Florida

Col. Charles P. "Chuck" Wilson II
Commander
Air Force Command and Control
Training and Innovation Group

Commander's Top 5 Priorities:

1. **AFC2TIG Manpower Improvement**
   - Obtain additional authorizations for required billets
   - Rectify GTACS billets
   - Pursue fills for shortfalls in critical AFSCs
2. **Establish DET 3, AFC2TIG - Dynamic Battle Control Cell**
   - Mission Development
   - Manpower Sourcing
   - Funding
3. **Deliberate Scheduling & Execution of AFC2TIG Events**
   - C2WS Courses • JEFX Preparation
   - BLUE FLAG • TBMCS Testing
4. **Develop AFC2TIG Strategic Plan**
   - AFC2TIG Road Ahead
5. **AFC2TIG Administrative Improvements**
   - EPRs, OPRs, PRFs, Awards, Decorations

Commander's Corner

I'd like to welcome you to the first edition of the Air Force Command and Control Training and Innovation Group's (AFC2TIG) newsletter. I will be using this publication to keep you informed on the different activities that are going on throughout the Group.

From my perspective, I get to see all the work that is being done in conjunction with each other. I have not seen such synergy until I got to this Group.

Take the latest Blue Flag, for example. It was run by the 505th Exercise Control Squadron, but they needed the help of the 505th Systems Squadron to stimulate the Air Operations Center with realistic inputs. The 505th Operations Squadron and 605th Test Squadron help before, during and after the exercise, providing their expertise to the controllers and the players. And, there's the Theater Air Command and Control Simulation Facility in New Mexico providing link ups for the players.

We've got a lot of expertise here in our group. We hire contractors who have spent their lives working for the military and harness their experience for our benefit. And we bring back past commanders as mentors to guide our future Air Component Commanders.

We do a lot here at the AFC2TIG. At times it has been and will be very busy. That's an inheritance from our past and shows how important we are and are becoming to the Air Force.

I've said it before, we're like a ship that hasn't been finished, but is still asked to sail. We're moving forward and we don't have everything we need—yet. That's your job and my number one priority. What do we need? How are we going to do it? As we define ourselves, the rest of the Air Force will come to see us for what we are…

We are the focus for Command and Control for the Air Force. We know about its ins and outs. We are leading the Air Force to where it needs to go with Command and Control. We are testing, training, exercising, and experimenting all the Air Force's Command and Control people, processes, and systems.

Now, there are a lot of organizations that have some claim to command and control. We may be the leader, but we're not the owner. I see us as the thread that ties them all together. We bring commonality across the diverse groups in the Air Force.

What we accomplish together, we could not separately. I thank all of you for your hard work to date and for what is in our future.

Air War Begins and Ends at Hurlburt

by Capt. Geoffrey Fischer
AFC2TIG Public Affairs

More than 1,300 people from nine different countries and all four U.S. military services conducted a simulated air war at Hurlburt Field from March 1-8.

Bringing them together was 9th AF's Blue Flag exercise (Blue Flag 00-2), run by the 505th Exercise Control Squadron. Desert BDU-clad members of the 9th Air Force from Shaw Air Force Base, South Carolina deployed to Hurlburt Field to participate in Blue Flag 00-2.

Blue Flag exercises help the Numbered Air Force (NAF) Commanders practice aerospace operations at the operational level of war. "Hurlburt was chosen as the best site for the exercise," said Lt. Col. Scott Sells, 505 ECS Commander, "because there isn't adequate housing or facilities at Shaw [AFB] to hold all the 1,300 players and controllers needed for a 9th Air Force Blue Flag."

The exercise, using a Southwest Asia scenario appropriate for 9th Air Force's Central Command responsibilities, brings together 130 international players from nine coalition partners from the region.

What makes the 9th Air Force's Blue Flags special is their focus on international cooperation. Sells said, "One of the most important goals for Blue Flag, is to practice with our coalition partners planning at the operational level of war. We see how our theater level plans would play out in a realistic environment."

The 505th Exercise Control Squadron did a lot of preparation and coordination to provide realistic training for the NAF Commander. "The 505 ECS links together 11 separate exercise locations from across the country, and combines them with 29 models and simulations for the exercise," Sells said. "In order to pull off this extremely complex test, we had to establish a Professional Control Force (PCF)," Sells said.

"The Professional Control Force is made up from personnel permanently assigned to the 505 ECS, and others from the AFC2TIG who are experts in their field," Sells said. "They play all the roles outside of an Air Operations Center to support the exercise. The PCF covers all specialties for the exercise from mobility to logistics, and fighter, tanker, and bomber air detachments," said Sells. "They can give credible inputs from National Command Authority guidance down to inputs from a wing operations center. The Professional Control Force provides this expertise with less manpower than in previous Blue Flags," said Sells.

In the Process of Fighting an Exercise Theater Level War

Air Operations Center for 9th Air Force Blue Flag Exercise at Hurlburt Field, 1-8 March 2000.
Photographer: MSgt. Kevin Hoeth, 16th SOW Public Affairs.

In past Blue Flags, it took up to 350 controllers to coordinate an air war without a PCF. By professionalizing the force (keeping a core group of controllers on a full-time basis) the 505 ECS was able to reduce that number to less than 225.

The commander of the AFC2TIG sees the benefits of the Professional Control Force. "We are providing better and more consistent training for the NAFs," said Col. Chuck Wilson, AFC2TIG Commander. " Technology and the PCF have allowed us to reduce the number of controllers needed. The PCF is a force multiplier."

There are also smarter people conducting the exercises as opposed to "chair fillers," Wilson said. "There are less TDYs required for the NAFs and that means there is an overall money savings for the government."

From Tests to Exercises to Experiments and Demos...

Major Scott Rutherford & Mr. Steve Schlembach
Comm Plans and Programs
505th Systems Squadron

Sunlight breaks over the Choctawhatchee Bay in Northwest Florida, illuminating the angled brown metal roof of the Aerospace Operations Center with a burnt orange glow. Uniformed people in tan desert camouflage, green and blue flight suits and traditional woodland battle dress move with silent purpose to and from this facility. Inside, the overhead fluorescent lighting provides only slightly more brightness than the radiation emanating from banks of computer monitors. Displays filled with a variety of textual and graphical battlefield information give these seasoned warriors the facts they will need to successfully plan and execute an air war against enemy forces an ocean away.

Located on the Air Force Command and Control Training and Innovation Group's campus at Hurlburt Fld FL, these command and control warriors have been using this unique facility to direct military action against a simulated enemy; an enemy that exists only in the virtual world created by AFC2TIG's 505th Exercise Control Squadron. Another mission accomplished.

With Blue Flag 00-2 not yet a faint memory in the minds of AFC2TIG personnel, another request for the group's weapon system is fragged. A short notice tasking to support a Theater Battle Management Core System test at a site in Colorado is answered with the 'deployment' of the AFC2TIG weapon system in less than one week. A scenario is generated by the 505th Exercise Control Squadron, while members of the 605th Test Squadron establish the event. By using the secure internet protocol routing network electrons flow and the mission is accomplished. In less than a week, systems were identified, a network architecture created, data paths coordinated and established, network protocols determined, IP addresses disseminated and advertised, and then accreditation packages created and signed. Another mission, another success.

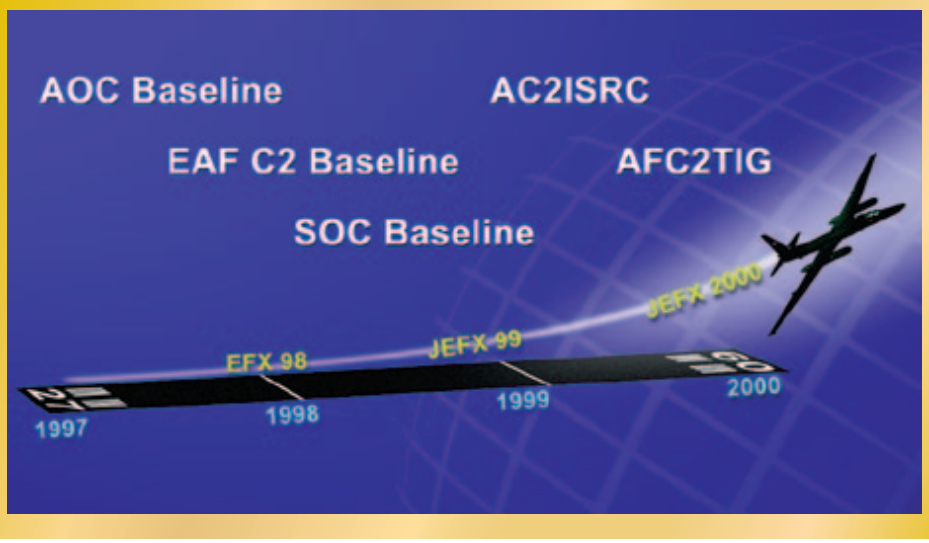
While this goes on, other teams of professionals are preparing the AFC2TIG C2 weapon system to support Blue Flag 00-3 with 8 AF's that will take place at Barksdale Air Force Base, Los Angeles This time, dedicated T-1 wirelines and a satellite communications shot will feed their C2 environment with the necessary information for them to conduct their C2 exercise. Additionally, a communications team with a Distributed Wargaming System kit is dispatched to Barksdale AFB to establish the interface between the C2 architecture of eight AF systems and that of the virtual environment of the AFC2TIG and other modeling and simulation systems across the US military. Another mission…

From tests to exercises to experiments and demonstrations…How is it possible to support event after event? The task is given to the professional men and women of the 505th Systems Squadron. The squadron's mission at the AFC2TIG is to plan, setup, operate and maintain, and finally reconstitute the communications infrastructure, the AOC, C2 and Modeling and Simulation systems in support of the C2 mission. Their task is to keep these systems "combat" ready, much like the mechanics and crew chiefs do with F-15s on a flightline. Ready to respond in minimum time to taskings (e.g., tests, training, exercises and experiments) in direct support of C2 warfighters worldwide.

The 505th Systems Squadron didn't start out with this mission. Its heritage comes from the Ground Theater Air Control System world. Reorganized in 1999, the squadron now not only operates GTACS equipment, but provides communications and computer support operations for the AFC2TIG and accomplishes the mission via three functional flights and the C3 Operations Center. The plans and program flight takes care of event planning, infrastructure engineering and configuration

(Continued on page 4)

Influencing Culture Change



505 OS Mentors and Trains JFACC and AOC

The 505th Operations Squadron is currently spearheading an Air Force-wide effort to mentor, train, and provide feedback to the Joint Forces Air Component Commander (JFACC) and his staff that form the core of the Air Operations Center (AOC) in time of war. This effort started as a precursor to the vision of ultimately evaluating AOC's, their structures and functions.

The first effort, conducted as part of 8 AF's Blue Flag 99-4 this past September, laid the foundation. Blue Flag 00-2 was much more successful, with a large contingency of augmentees from the C2WS enhancing the team's ability to provide immediate feedback and additional training from platform instructors. The leadership from 9 AF was very receptive to additional mentoring and training of an organization of coalition partners. The end result of this and future efforts will result in a draft of two documents to meet CSAF guidance for a Concept of Operations (CONOPS) on Training and Evaluating an AOC, as well as inputs to the Air Staff initiative for a formal Mentor/Trainer program.

The 505 OS is also involved as both OPR and OCR in drafting, compiling, revising and disseminating numerous AF-wide CONOPS supporting the following: AOC CONOPS, Time Critical Targeting/Time Sensitive Targeting (TCT/TST) CONOPS (a.k.a. the JFACC TCT Bible), Collaborative Tools /Information Work Space (IWS) CONOPS, the AOC Dash One, and Evaluation Criteria for Training and Exercising an AOC.

These efforts will enhance the abilities of the operational AOC's to train and fight, while providing an opportunity for direct feedback to the AFC2TIG as to how we can enhance training, exercising, and documenting standard operating procedures in the CAF. Many of these efforts are occurring simultaneously with our heavy involvement in JEFX Spiral Development, Blue Flag IPC's/MPC's/Quick Frag efforts, Det 3 beddown requirements, and Kosovo Lessons Learned compilation.

(Continued from 505 SYS article)

control, resource allocation and management, and system accreditation. The operations flight operates and maintains the AOC, the AFC2TIG ATM backbone, more than nine networks and their associated systems/services (over 40 systems), the professional control force operations center, and the M&S systems. The maintenance flight assumes responsibility for the myriad of tactical equipment, both organic and transitory, that supports the AFC2TIG. Finally, the C3OC acts just like a base wing command post, ensuring all missions are properly supported by conducting daily operations meetings and publishing the Communications Tasking Order, much like the Air Tasking Order generated by an AOC. Within the C3OC information is displayed on large wall-mounted screens showing circuit and system status for each event.

The ability to quickly respond to taskings is accomplished by a concept called "Distributed Persistent Infrastructure" or DPI for short. Its goal, move electrons not people and equipment. The entire campus of the AFC2TIG is designed to support C2 events and is connected with several sites across the US. As Rome once was the center of the known world, the AFC2TIG is the center of the virtual world for the AF. On the campus of the AFC2TIG, systems from across the US military are confederated together via high-tech networks creating an environment so real that C2 warriors operating within an AOC can't tell the difference.

The AFC2TIG infrastructure and associated systems are very unique. This weapon system is designed with one intent in mind – support the C2 warrior. Just as a fighter can't fly without all of its parts, neither can the AFC2TIG C2 weapon system perform its mission without all of its sub-systems. Whether it's providing information to our customers via web servers on NIPRNET, SIPRNET, or JWICS, access to numerous external networks connecting locations together, providing additional phones via the ATM-based phone system, temporarily assigning e-mail accounts from the AFC2TIG exchange servers to TDY personnel, or supporting the day-to-day requirements of AFC2TIG personnel, this weapon system is ready and can handle it. This weapon system is a system of systems; a synergy that isn't found anywhere else.

The men and women of the 505th Systems Squadron stand by waiting orders to "deploy" the AFC2TIG's C2 weapon system in support of America's C2 Warriors.

United States Air Force C2 NEWS

The C2 News wants your submissions! If you find an article you think would be appropriate for the rest of the C2 world, send it to us and we'll put it in! Comments are welcome.

This funded Air Force newspaper is an authorized publication for members of the U.S. Military services. Contents of Air Force C2 News are not necessarily the official view of, or endorsed by, the U.S. Government, the Department of Defense or the Department of the Air Force. The editorial content is edited, prepared, and provided by the Public Affairs office of the Air Force Command and Control Training and Innovation Group. All photographs are Air Force photographs unless otherwise indicated.

Commander
Col. Chuck Wilson

Editor
Capt. Geoffrey Fischer

Email stories and articles to:
geoffrey.fischer@hurlburt.af.mil

605 TS Takes Lead in TBMCS Testing

The 605th Test Squadron conducted a Mission Operational Test and Evaluation of the Theater Battle Management Core Systems (TBMCS) in early 2000 with the Air Force Office of Test and Evaluation Center. Since then, they have continued to assist with its development and testing.

The TBMCS consists of hardware and software to provide operators the capability to plan and execute theater air operations. It will implement interoperable functionalities with other C2 systems used in theater military operations. TBMCS will comply with the defense information infrastructure common operating environment. The system will provide full support to force- and unit-level warfighters throughout all phases of military operations—readiness, deployment, sustainment, and reconstitution.

The test will assess TBMCS's capability to support 45 mission critical functions organized into key legacy, other legacy, and non-legacy functions.

"The troops, including military, GS, and contractors, have done a phenomenal job of running issues to ground," said Lt Col Michael Kadlubowski, 605 TS Commander. "They've deconflicted the testing with high-level events within the AFC2TIG and the Air Force."

"They haven't been getting the recognition, but without their hard work this testing wouldn't happen," Kadlubowski said. "We also couldn't have done this without the help of the 505th Exercise Control Squadron or the 505th Systems Squadron."

"We have an outstanding team," Kadlubowski concluded.

Detachment 1 Seattle, Washington

AWACS NATO Mid-Term System Upgrades (NMT)

Det 1 is playing an advisory role in the NMT program because of its importance to U.S. AWACS Block 40/45 upgrade. The U.S. is combining efforts with NATO to take advantage of the improvements being made and incorporate them into our future fleet.

Project/System Description: The NATO Mid-Term Modernization Program is a significant design and development project to enhance the NATO E-3A fleet by improving the existing functional capabilities of data processing, communications, sensor fusion, and navigation.

The primary data processing enhancements provide an improved Man-Machine Interface an addition of a Multi-Sensor Integration capability. Communications allocation and configuration will be achieved by a Digital Communications System. The basic communications capabilities will be augmented with additional VHF radios and UHF Satellite Communications capabilities.

The Identification Friend or Foe interrogator and transponder will be upgraded. Five additional Situation Display Consoles will also be installed.

Background: The NATO E-3A Mid-Term Man Machine Interface software and COTS hardware, including battle management solutions, will be the baseline for the U.S. Block 40/45 upgrade.

Block 40/45 upgrade will provide modification kits and support for the U.S. E-3 AWACS fleet to: Improve air superiority fighter effectiveness in data link warfare; improve Combat Identification and integrated Information Broadcast System, and further exploitation of ESM and RSIP radar sensor data; address all major issues in the Computer & Display subsystem; achieve the required level of information and Global Grid communications interoperability to support Joint Task Force/Expeditionary Air Force Information Superiority in AFC2ISR operations; and reduce C&D mission crew training.

Detachment 2 Melbourne, Florida

Virtual JointSTARS (VSTARS)

Det 2 tested VSTARS software system capabilities and limitations. VSTARS provides the modeling and simulation community a realistic ground radar emulator.

By providing a virtual simulation for inputs in events, it saves the government money by not having to fly real missions with the aircraft. It provides more realistic and valuable training because it is able to encompass the entire environment, including all simulated targets that couldn't be seen with a real aircraft's inputs.

Because there are a limited number of aircraft, the simulation provides more people exposure, to what they would really see in a combat simulation, without pulling aircraft from real world requirements.

VSTARS is a high fidelity radar emulation of the Joint STARS airborne sensor. It was developed to support an OSD initiative to

(Continued on page 7)

Air Force Command and Control Training and Innovation Group

Theater Air Command & Control Simulation Facility

Test • Train • Exercise • Experiment

The Warfighter-in-the-Loop for C2 Excellence

The Theater Air Command and Control Simulation Facility, located at Kirtland AFB NM, is a unique modeling and simulation facility integrating numerous high fidelity, warfighter-in-the-loop, tactical command and control/weapon system simulators into a fully functioning C2 architecture.

This use of high fidelity, warfighter-in-the-loop simulators, sets TACCSF apart from most simulation facilities and yields instant credibility to TACCSF products. TACCSF active duty and contractor crews man the simulators for integration testing, while mission ready crews are brought in as required.

The simulators are representations of "real" combat platforms and systems, bringing maximum "realism" to all M&S efforts.

TACCSF's origins date back to the early '80s effort by the Office of the Secretary of Defense and the Air Force to address air defense issues in Central Europe. Today, TACCSF is managed by Det 4, Air Force Command and Control Training and Innovation Group.

Below is a list of various simulations and simulators TACCSF has available to perform real-time warfighter in-the-loop simulations. They can be entirely generated and supported at TACCSF, or TACCSF can contribute any variety of systems to a common simulation environment across a network of simulation sites.

Weapons System Simulators

- Airborne Laser (ABL)
- Air Defense Systems Integrator (ADSI)
- E-3 Airborne Warning And Control System (AWACS)
- F-15C Weapons and Tactics Trainer (WTT)
- Joint Surveillance Target Attack Radar System (JSTARS)
- Patriot Information and Coordination Central (ICC)
- Missile Tracker/Correlator
- Modular Control Equipment (MCE)
- Patriot Fire Unit (ESC)
- Cobra Ball
- Special Information System (SIS)

Data Link Simulators

- Tactical Information Broadcast System (TIBS) Terminal
- Tactical Digital Information Link "J" (TADIL J)
- Tactical Digital Information Link "B" (TADIL B)
- Army Tactical Data Link 1 (ATDL-1)
- Patriot Digital Information Link (PADIL)
- Tactical Ballistic Missile (TBM)

Air Force and Army - Work and Learn Together in Virtual Exercises

by Capt. Geoffrey Fischer
AFC2TIG Public Affairs

The dream of joint mission training in a virtual environment is one step closer thanks to one of the smallest units at Fort Hood.

The Operating Location AA for the Air Force Command and Control Training and Innovation Group, stationed at Fort Hood with two personnel, has been coordinating between the Close Combat Tactical Trainer Center and Air Force Tactical Air Control Parties to bring the two closer together, while enhancing the training for both.

"By bringing the TACPs into the virtual training that the Army is already doing with the CCTT, it allows for more realistic training," said Lt. Col. Ken Kruse, OLAA Commander. "The Army learns how to use air power on the battlefield by having the TACPs coordinate with the ground commander in a real time, realistic training environment."

The Air Force controllers are then able to practice in a more "threatening" environment, said MSgt. Caesar Simpson, OLAA CCTT project manager.

"In the past, air controller training consisted of going from point A to point B by the quickest route," Simpson said. "All the exercises at Fort Hood are 'canned' and the TACPs get complacent. The simulation doesn't allow them to do that."

The simulator is designed to have land mines and an enemy that can shoot back. It allows them to practice more dangerous missions without fear of injury and failure is expected. The simulator is an 8 by 10 foot box inside the CCTT facility. It's basically a HMMWV simulator being used for a greater purpose. There are two seats and three screens for each seat giving a limited panoramic view.

The TACP in the passenger seat can then leave the vehicle to do some virtual scouting on his own. Using the ability to low crawl and to see through binoculars or "binos", the Air Force controller can spot enemy movements and call them in through the radio in the simulator.

The controller can help with attacks of artillery or air strikes. The effects of the simulation are so detailed that the controller can see bombs dropping, explosions, gun fire, and dust kicked up from fast moving vehicles. Because of the realism of the terrain, that is built into the system, it gives the additional benefit that the controllers can get to know the terrain.

"Initially we will focus on TACP procedural training and Army employment of close air support," Kruse said. "We hope to get other folks interested and perhaps include more virtual pieces, which would train a battle staff on decision making for planning and executing a ground air battle."

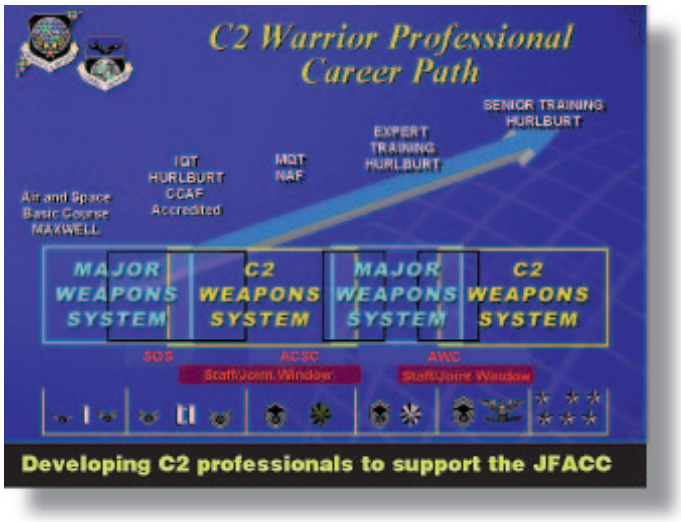
Air Force Command and Control Training and Innovation Group

C2 Warrior School

Test • Train • Exercise • Experiment

Educating the C2 Warrior

The C2 Warrior School supports national security strategy by preparing joint service, coalition and other federal agency personnel through academic instruction in formal and exercise environments to execute the Joint Force Air Component Commanders' (JFACC) aerospace campaign; to achieve National Command Authorities objectives worldwide; Executive agent for all Air Tasking Order (ATO) training; Trains and educates over 6,500 warfighters annually. The C2 Warrior School has a detachment at Ft. McPherson, Georgia, and liaisons from the Army, Navy and Marines.



C2WS Classes

Joint Forces Air Component Commander Course
(General Officers)

00-03	10 Jul 00	11 Jul 00

Joint Aerospace Operations Senior Staff Course
(0-6)

00-04	18 Sep 00	22 Sept 00

Joint Aerospace Command and Control Course
(E-5 to 0-5)

00-06	6 Jun 00	23 Jun 00
00-07	11 Jul 00	28 Jul 00
00-08	8 Aug 00	25 Aug 00
00-09	12 Sept 00	29 Sept 00

Command and Control Warrior Advanced Course
(0-4 to 0-6)

00-04	19 Jun 00	14 Jul 00

Joint Aerospace Systems Administrators Course
(system administrators within an AOC)

00-04	10 Jul 00	11 Aug 00
00-05	28 Aug 00	29 Sep 00

Joint Aerospace Computer Applications Course
(individuals assigned duties within an AOC)

00-04	26 Jun 00	29 Jun 00
00-05	5 Sep 00	8 Sep 00
00-05 (BFAC)	14 July 00	15 July 00

Joint Combat Search & Rescue Coordinator Course
(all grades with CSAR related duties)

00-04	8 Aug 00	11 Aug 00

(Continued from 605 TS/Det. 2 article)

determine the utility of advanced simulation in the test and evaluation environment.

VSTARS will be used to realistically train Joint STARS operators, simulate the Joint STARS system for military exercises, and test the utility of new systems within the Joint STARS framework. It also can be used in combination with other systems to assist in developing doctrine and in testing war plans.

In addition to the U.S. Air Force and Army, VSTARS is also being used at the Supreme Headquarters Allied Powers Europe Technical Center. It was used in the Joint Expeditionary Force Experiment 99, and is expected to play a major role in Air Force Command and Control training and exercises, such as Optic Windmill, Ulchi Focus Lens, and Blue Flag.

AFC2TIG is:

The aerospace C2 focus for testing, training, exercising, and experimentation; supporting the warfighter with the best people, processes, and systems

AEROSPACE C2 & ISR CENTER

Test • Train • Exercise • Experiment

AF Command and Control Training and Innovation Group
138 Hartson Street, Bldg. 90005
Hurlburt Field, Florida 32544

DSN:
Ph: 641-9000 x9043
FAX:579-1805

COMM:
Ph: (850) 881-9000 x9043
FAX: (850) 884-1805

WEB (mil):
http://afc2tig.hurlburt.af.mil/

WEB (public):
http://www2.acc.af.mil/afc2tig/

EMAIL:
geoffrey.fischer@hurlburt.af.mil

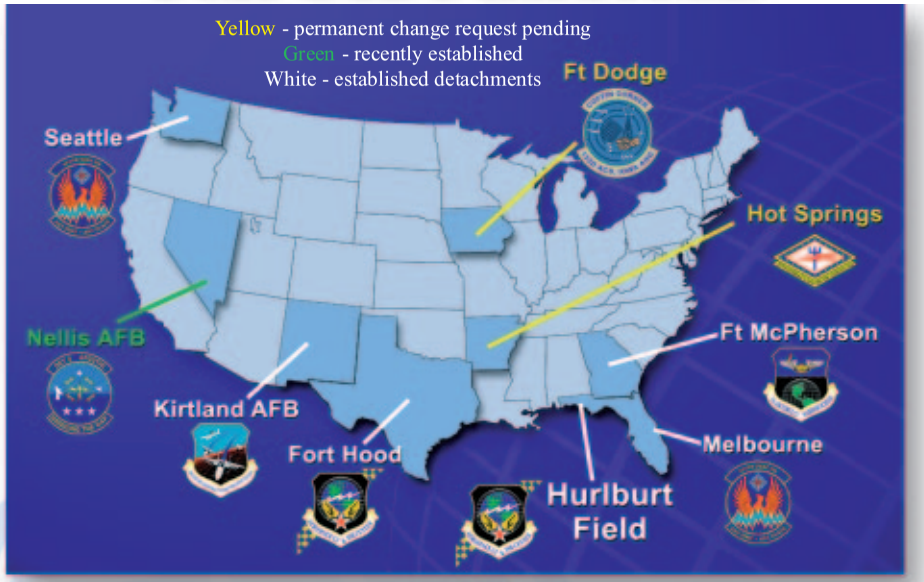
C2 NEWS is created & produced by LWK and Associates

AF Command and Control Training and Innovation Group
138 Hartson Street, Bldg. 90005
Hurlburt Field, Florida 32544

Official Business

United States Air Force
C2 NEWS

AFC2TIG Across America



Inside This Issue

Col. Wilson Introduces C2 NEWS

Air War Begins at Hurlburt Page 2

505 SYS From Tests to Exercises to Experiments and Demos... Page 3

AF/Army Works Together at Ft. Hood Page 7